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## SEQUENCE LISTING

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<120> CNS chloride modulation and uses thereof

<130> 85409-29

<150> US 60/470,885  
 <151> 2003-05-16

<160> 8

<170> PatentIn version 3.2

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Gly Gly Ala Val Gly Leu Cys Phe Tyr Leu Gly Thr Thr Phe Ala Gly  
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Thr Gly Thr Ile Leu Ala Ile Ala Thr Thr Ser Ala Val Tyr Ile Ser  
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Ile Ser Arg Asp Gly Ile Val Pro Phe Leu Gln Val Phe Gly His Gly  
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Lys Ala Asn Gly Glu Pro Thr Trp Ala Leu Leu Leu Thr Ala Cys Ile  
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Cys Glu Ile Gly Ile Leu Ile Ala Ser Leu Asp Glu Val Ala Pro Ile  
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Leu Ser Met Phe Phe Leu Met Cys Tyr Met Phe Val Asn Leu Ala Cys  
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Tyr Tyr His Trp Thr Leu Ser Phe Leu Gly Met Ser Leu Cys Leu Ala  
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Ala Gly Leu Ile Tyr Lys Tyr Ile Glu Tyr Arg Gly Ala Glu Lys Glu  
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Gly Val Ser His Leu Ile Gln Ser Gly Gly Leu Gly Gly Leu Gln His  
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His Gln Thr Trp Arg Asn Phe Ile Glu Leu Val Arg Glu Thr Thr Ala  
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His Leu Arg Ile Thr Ala Glu Val Glu Val Val Glu Met His Glu Ser  
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Ser Gln Ile Leu Lys Gln Met His Leu Thr Lys Asn Glu Arg Glu Arg  
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Glu Ile Gln Ser Ile Thr Asp Glu Ser Arg Gly Ser Ile Arg Arg Lys  
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Val Ser Ser Glu Gly Ile Lys Asp Phe Phe Ser Met Lys Pro Glu  
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Trp Glu Asn Leu Asn Gln Ser Asn Val Arg Arg Met His Thr Ala  
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Val Arg Leu Asn Glu Val Ile Val Lys Lys Ser Arg Asp Ala Lys  
 1055 1060 1065

Leu Val Leu Leu Asn Met Pro Gly Pro Pro Arg Asn Arg Asn Gly  
 1070 1075 1080

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 Met Leu Asn Asn Leu Thr Asp Cys Glu  
 1 5

gac ggc gat ggg gga gcc aac ccc ggt gat ggc aac ccc aaa gag agc 160  
 Asp Gly Asp Gly Gly Ala Asn Pro Gly Asp Gly Asn Pro Lys Glu Ser  
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agt ccc ttc atc aac agc acg gac acg gag aag ggc aga gag tac gat 208  
 Ser Pro Phe Ile Asn Ser Thr Asp Thr Glu Lys Gly Arg Glu Tyr Asp  
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ggc agg aac atg gcc ctg ttt gag gag gag atg gac acc agc ccc atg 256  
 Gly Arg Asn Met Ala Leu Phe Glu Glu Glu Met Asp Thr Ser Pro Met  
 45 50 55

gta tcc tcc ctg ctc agt ggg ctg gcc aac tac acc aac cta ccc cag 304  
 Val Ser Ser Leu Leu Ser Gly Leu Ala Asn Tyr Thr Asn Leu Pro Gln  
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 Gly Ser Arg Glu His Glu Glu Ala Glu Asn Asn Glu Gly Gly Lys Lys  
 75 80 85

aag ccg gtg cag gct cct cga atg ggc acc ttc atg ggt gtg tac ctg 400  
 Lys Pro Val Gln Ala Pro Arg Met Gly Thr Phe Met Gly Val Tyr Leu  
 90 95 100 105

cgg tgc ctg cag aac atc ttt ggt gtc atc ctc ttc ctg cgg ctc acg 448  
 Pro Cys Leu Gln Asn Ile Phe Gly Val Ile Leu Phe Leu Arg Leu Thr  
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14/36

tgg gtg gtg ggc atc gcg ggc atc atg gag tcc ttc tgt atg gtc ttc	496
Trp Val Val Gly Ile Ala Gly Ile Met Glu Ser Phe Cys Met Val Phe	
125 130 135	
att tgc tgc tcc tgt acg atg ctc aca gcc att tcc atg agt gca atc	544
Ile Cys Cys Ser Cys Thr Met Leu Thr Ala Ile Ser Met Ser Ala Ile	
140 145 150	
gca acc aat ggt gtt gtg cct gct ggt ggc tgc tac tac atg att tcc	592
Ala Thr Asn Gly Val Val Pro Ala Gly Gly Ser Tyr Tyr Met Ile Ser	
155 160 165	
agg tct ctg ggc ccg gag ttt ggg ggc gcc gtg ggc ctc tgc ttc tac	640
Arg Ser Leu Gly Pro Glu Phe Gly Gly Ala Val Gly Leu Cys Phe Tyr	
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ctg ggc acc acc ttt gct ggg gct atg tac atc ctt ggc acg atc gag	688
Leu Gly Thr Thr Phe Ala Gly Ala Met Tyr Ile Leu Gly Thr Ile Glu	
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Ile Leu Leu Ala Tyr Leu Phe Pro Ala Met Ala Ile Phe Lys Ala Glu	
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Ser Ile Leu Ala Ile Tyr Ala Gly Val Ile Lys Ser Ala Phe Asp Pro	
270 275 280	
ccc aat ttc ccg atc tgc ctc ctg ggg aac cgc acg ctg tct cgc cat	976
Pro Asn Phe Pro Ile Cys Leu Leu Gly Asn Arg Thr Leu Ser Arg His	
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Gly Phe Asp Val Cys Ala Lys Leu Ala Trp Glu Gly Asn Glu Thr Val	
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acc aca cgg ctc tgg ggc ctt ttc tgc tcc tcc cgc ctc ctc aat gcc	1072
Thr Thr Arg Leu Trp Gly Leu Phe Cys Ser Ser Arg Leu Leu Asn Ala	
315 320 325	
acc tgt gat gag tac ttc acc cga aac aat gtc aca gag atc cag ggc	1120
Thr Cys Asp Glu Tyr Phe Thr Arg Asn Asn Val Thr Glu Ile Gln Gly	
330 335 340 345	

15/36

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gcc cca cgt ctg ctg cag gcc atc tcc cgg gat ggc ata gtg ccc ttc Ala Pro Arg Leu Leu Gln Ala Ile Ser Arg Asp Gly Ile Val Pro Phe 510 515 520	1648
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aac tgg agg cca cga ttt cgc tat tac cac tgg act ctc tcc ttc ctg Asn Trp Arg Pro Arg Phe Arg Tyr Tyr His Trp Thr Leu Ser Phe Leu 590 595 600	1888
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gca ctg gtg gcc atg ctc att gcc gga ctc att tat aag tac atc gag Ala Leu Val Ala Met Leu Ile Ala Gly Leu Ile Tyr Lys Tyr Ile Glu 620 625 630	1984
tac cgg ggg gcg gag aag gag tgg ggg gat gga atc cga ggc ctg tct Tyr Arg Gly Ala Glu Lys Glu Trp Gly Asp Gly Ile Arg Gly Leu Ser 635 640 645	2032
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cat acg aag aac tgg agg ccc cag ctg ctg gtg ctg gtg cgt gtg gac His Thr Lys Asn Trp Arg Pro Gln Leu Leu Val Leu Val Arg Val Asp 670 675 680	2128
cag gat cag aac gtg gtg cat ccg cag ctg ctc tcc ctg acc tcc cag Gln Asp Gln Asn Val Val His Pro Gln Leu Leu Ser Leu Thr Ser Gln 685 690 695	2176
ctc aag gca ggg aag ggc ctg acc att gtg ggc tcc gtc ctt gag ggc Leu Lys Ala Gly Lys Gly Leu Thr Ile Val Gly Ser Val Leu Glu Gly 700 705 710	2224
acc ttt ctg gac aac cat cca cag gct cag cgg gca gag gag tct atc Thr Phe Leu Asp Asn His Pro Gln Ala Gln Arg Ala Glu Glu Ser Ile 715 720 725	2272
agg cgc ctg atg gag gct gag aag gtg aag ggc ttc tgc cag gta gtg Arg Arg Leu Met Glu Ala Glu Lys Val Lys Gly Phe Cys Gln Val Val 730 735 740 745	2320
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ggc ctc ggg gga ttg caa cac aat acc gtg ctg gtg ggc tgg cct cgc Gly Leu Gly Gly Leu Gln His Asn Thr Val Leu Val Gly Trp Pro Arg 765 770 775	2416
aac tgg agg cag aag gag gat cat cag aca tgg agg aac ttc atc gaa Asn Trp Arg Gln Lys Glu Asp His Gln Thr Trp Arg Asn Phe Ile Glu 780 785 790	2464

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ctg gtc cgg gaa act aca gcc ggc cac ctc gcc ctg ctg gtc acc aag Leu Val Arg Glu Thr Thr Ala Gly His Leu Ala Leu Leu Val Thr Lys 795 800 805	2512
aat gtt tcc atg ttt ccc ggg aac cct gag cgc ttc tcg gag ggc agc Asn Val Ser Met Phe Pro Gly Asn Pro Glu Arg Phe Ser Glu Gly Ser 810 815 820 825	2560
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ccc ttc ctg ctg cga cac cac aag gtc tgg agg aaa tgc aaa atg cgg Pro Phe Leu Leu Arg His His Lys Val Trp Arg Lys Cys Lys Met Arg 845 850 855	2656
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acc aag aac gag cgg gaa cgg gag atc cag agc atc aca gac gag tct Thr Lys Asn Glu Arg Glu Arg Glu Ile Gln Ser Ile Thr Asp Glu Ser 925 930 935	2896
cgg ggc tcc att cgg agg aag aat cca gcc aac ccc cgg ctc cgc ctc Arg Gly Ser Ile Arg Arg Lys Asn Pro Ala Asn Pro Arg Leu Arg Leu 940 945 950	2944
aat gtt ccc gaa gag aca gcg tgt gac aat gag gag aag cca gag gag Asn Val Pro Glu Glu Thr Ala Cys Asp Asn Glu Glu Lys Pro Glu Glu 955 960 965	2992
gag gtg cag ctg atc cat gac cag agt gct ccc agc tgc cct agc agc Glu Val Gln Leu Ile His Asp Gln Ser Ala Pro Ser Cys Pro Ser Ser 970 975 980 985	3040
tcg cca tct cca ggg gag gag ccc gag ggg gag agg gag aca gac cca Ser Pro Ser Pro Gly Glu Glu Pro Glu Gly Glu Arg Glu Thr Asp Pro 990 995 1000	3088

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gag gtg cat ctt	acc tgg acc aag gat	aag tca gtg gca gag	aag	3133		
Glu Val His Leu	Thr Trp Thr Lys Asp	Lys Ser Val Ala Glu Lys				
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aat aaa ggc ccc	agt ccc gtc tcc tcc	gag ggc atc aag gac ttc	3178			
Asn Lys Gly Pro	Ser Pro Val Ser Ser	Glu Gly Ile Lys Asp Phe				
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ttc agc atg aag	cgc gag tgg gaa aac	ttg aac cag tcc aat gta	3223			
Phe Ser Met Lys	Pro Glu Trp Glu Asn	Leu Asn Gln Ser Asn Val				
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cgg cgc atg cac	aca gct gtg cgg ctg	aac gag gtc atc gtg aat	3268			
Arg Arg Met His	Thr Ala Val Arg Leu	Asn Glu Val Ile Val Asn				
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aaa tct cgg gat	gcc aag cta gtt ttg	ctc aac atg ccc ggg cct	3313			
Lys Ser Arg Asp	Ala Lys Leu Val Leu	Leu Asn Met Pro Gly Pro				
1065	1070	1075				
ccc cgc aac cgc	aat ggg gat gaa aac	tac atg gaa ttc ttg gag	3358			
Pro Arg Asn Arg	Asn Gly Asp Glu Asn	Tyr Met Glu Phe Leu Glu				
1080	1085	1090				
gtc ctc act gag	caa ctg gac cgg gtg	atg ctg gtc cgc ggt ggc	3403			
Val Leu Thr Glu	Gln Leu Asp Arg Val	Met Leu Val Arg Gly Gly				
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			20					25					30		

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Asp Thr Glu Lys Gly Arg Glu Tyr Asp Gly Arg Asn Met Ala Leu Phe  
 35 40 45

Glu Glu Glu Met Asp Thr Ser Pro Met Val Ser Ser Leu Leu Ser Gly  
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Leu Ala Asn Tyr Thr Asn Leu Pro Gln Gly Ser Arg Glu His Glu Glu  
 65 70 75 80

Ala Glu Asn Asn Glu Gly Gly Lys Lys Lys Pro Val Gln Ala Pro Arg  
 85 90 95

Met Gly Thr Phe Met Gly Val Tyr Leu Pro Cys Leu Gln Asn Ile Phe  
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Gly Val Ile Leu Phe Leu Arg Leu Thr Trp Val Val Gly Ile Ala Gly  
 115 120 125

Ile Met Glu Ser Phe Cys Met Val Phe Ile Cys Cys Ser Cys Thr Met  
 130 135 140

Leu Thr Ala Ile Ser Met Ser Ala Ile Ala Thr Asn Gly Val Val Pro  
 145 150 155 160

Ala Gly Gly Ser Tyr Tyr Met Ile Ser Arg Ser Leu Gly Pro Glu Phe  
 165 170 175

Gly Gly Ala Val Gly Leu Cys Phe Tyr Leu Gly Thr Thr Phe Ala Gly  
 180 185 190

Ala Met Tyr Ile Leu Gly Thr Ile Glu Ile Leu Leu Ala Tyr Leu Phe  
 195 200 205

Pro Ala Met Ala Ile Phe Lys Ala Glu Asp Ala Ser Gly Glu Ala Ala  
 210 215 220

Ala Met Leu Asn Asn Met Arg Val Tyr Gly Thr Cys Val Leu Thr Cys  
 225 230 235 240

Met Ala Thr Val Val Phe Val Gly Val Lys Tyr Val Asn Lys Phe Ala  
 245 250 255

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Leu Val Phe Leu Gly Cys Val Ile Leu Ser Ile Leu Ala Ile Tyr Ala  
 260 265 270

Gly Val Ile Lys Ser Ala Phe Asp Pro Pro Asn Phe Pro Ile Cys Leu  
 275 280 285

Leu Gly Asn Arg Thr Leu Ser Arg His Gly Phe Asp Val Cys Ala Lys  
 290 295 300

Leu Ala Trp Glu Gly Asn Glu Thr Val Thr Thr Arg Leu Trp Gly Leu  
 305 310 315 320

Phe Cys Ser Ser Arg Leu Leu Asn Ala Thr Cys Asp Glu Tyr Phe Thr  
 325 330 335

Arg Asn Asn Val Thr Glu Ile Gln Gly Ile Pro Gly Ala Ala Ser Gly  
 340 345 350

Leu Ile Lys Glu Asn Leu Trp Ser Ser Tyr Leu Thr Lys Gly Val Ile  
 355 360 365

Val Glu Arg Arg Gly Met Pro Ser Val Gly Leu Ala Asp Gly Thr Pro  
 370 375 380

Val Asp Met Asp His Pro Tyr Val Phe Ser Asp Met Thr Ser Tyr Phe  
 385 390 395 400

Thr Leu Leu Val Gly Ile Tyr Phe Pro Ser Val Thr Gly Ile Met Ala  
 405 410 415

Gly Ser Asn Arg Ser Gly Asp Leu Arg Asp Ala Gln Lys Ser Ile Pro  
 420 425 430

Thr Gly Thr Ile Leu Ala Ile Ala Thr Thr Ser Ala Val Tyr Ile Ser  
 435 440 445

Ser Val Val Leu Phe Gly Ala Cys Ile Glu Gly Val Val Leu Arg Asp  
 450 455 460

Lys Phe Gly Glu Ala Val Asn Gly Asn Leu Val Val Gly Thr Leu Ala  
 465 470 475 480

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Trp Pro Ser Pro Trp Val Ile Val Ile Gly Ser Phe Phe Ser Thr Cys  
 485 490 495

Gly Ala Gly Leu Gln Ser Leu Thr Gly Ala Pro Arg Leu Leu Gln Ala  
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Ile Ser Arg Asp Gly Ile Val Pro Phe Leu Gln Val Phe Gly His Gly  
 515 520 525

Lys Ala Asn Gly Glu Pro Thr Trp Ala Leu Leu Leu Thr Ala Cys Ile  
 530 535 540

Cys Glu Ile Gly Ile Leu Ile Ala Ser Leu Asp Glu Val Ala Pro Ile  
 545 550 555 560

Leu Ser Met Phe Phe Leu Met Cys Tyr Met Phe Val Asn Leu Ala Cys  
 565 570 575

Ala Val Gln Thr Leu Leu Arg Thr Pro Asn Trp Arg Pro Arg Phe Arg  
 580 585 590

Tyr Tyr His Trp Thr Leu Ser Phe Leu Gly Met Ser Leu Cys Leu Ala  
 595 600 605

Leu Met Phe Ile Cys Ser Trp Tyr Tyr Ala Leu Val Ala Met Leu Ile  
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Ala Gly Leu Ile Tyr Lys Tyr Ile Glu Tyr Arg Gly Ala Glu Lys Glu  
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Trp Gly Asp Gly Ile Arg Gly Leu Ser Leu Ser Ala Ala Arg Tyr Ala  
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Leu Leu Arg Leu Glu Glu Gly Pro Pro His Thr Lys Asn Trp Arg Pro  
 660 665 670

Gln Leu Leu Val Leu Val Arg Val Asp Gln Asp Gln Asn Val Val His  
 675 680 685

Pro Gln Leu Leu Ser Leu Thr Ser Gln Leu Lys Ala Gly Lys Gly Leu  
 690 695 700

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Thr Ile Val Gly Ser Val Leu Glu Gly Thr Phe Leu Asp Asn His Pro  
 705 710 715 720

Gln Ala Gln Arg Ala Glu Glu Ser Ile Arg Arg Leu Met Glu Ala Glu  
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Lys Val Lys Gly Phe Cys Gln Val Val Ile Ser Ser Asn Leu Arg Asp  
 740 745 750

Gly Val Ser His Leu Ile Gln Ser Gly Gly Leu Gly Gly Leu Gln His  
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Asn Thr Val Leu Val Gly Trp Pro Arg Asn Trp Arg Gln Lys Glu Asp  
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His Gln Thr Trp Arg Asn Phe Ile Glu Leu Val Arg Glu Thr Thr Ala  
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Gly His Leu Ala Leu Leu Val Thr Lys Asn Val Ser Met Phe Pro Gly  
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Asn Pro Glu Arg Phe Ser Glu Gly Ser Ile Asp Val Trp Trp Ile Val  
 820 825 830

His Asp Gly Gly Met Leu Met Leu Leu Pro Phe Leu Leu Arg His His  
 835 840 845

Lys Val Trp Arg Lys Cys Lys Met Arg Ile Phe Thr Val Ala Gln Met  
 850 855 860

Asp Asp Asn Ser Ile Gln Met Lys Lys Asp Leu Thr Thr Phe Leu Tyr  
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His Leu Arg Ile Thr Ala Glu Val Glu Val Val Glu Met His Glu Ser  
 885 890 895

Asp Ile Ser Ala Tyr Thr Tyr Glu Lys Thr Leu Val Met Glu Gln Arg  
 900 905 910

Ser Gln Ile Leu Lys Gln Met His Leu Thr Lys Asn Glu Arg Glu Arg  
 915 920 925

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Glu Ile Gln Ser Ile Thr Asp Glu Ser Arg Gly Ser Ile Arg Arg Lys  
 930 935 940

Asn Pro Ala Asn Pro Arg Leu Arg Leu Asn Val Pro Glu Glu Thr Ala  
 945 950 955 960

Cys Asp Asn Glu Glu Lys Pro Glu Glu Glu Val Gln Leu Ile His Asp  
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Gln Ser Ala Pro Ser Cys Pro Ser Ser Ser Pro Ser Pro Gly Glu Glu  
 980 985 990

Pro Glu Gly Glu Arg Glu Thr Asp Pro Glu Val His Leu Thr Trp Thr  
 995 1000 1005

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Ser Ser Glu Gly Ile Lys Asp Phe Phe Ser Met Lys Pro Glu Trp  
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Val Leu Leu Asn Met Pro Gly Pro Pro Arg Asn Arg Asn Gly Asp  
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Glu Asn Tyr Met Glu Phe Leu Glu Val Leu Thr Glu Gln Leu Asp  
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Tyr Ser  
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                                         Met
                                         1

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Leu Asn Asn Leu Thr Asp Cys Glu Asp Gly Asp Gly Gly Ala Asn Pro
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ggt gac ggc aat ccc aag gag agc agc ccc ttc atc aac agc acg gac      214
Gly Asp Gly Asn Pro Lys Glu Ser Ser Pro Phe Ile Asn Ser Thr Asp
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Thr Glu Lys Gly Arg Glu Tyr Asp Gly Arg Asn Met Ala Leu Phe Glu
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Glu Glu Met Asp Thr Ser Pro Met Val Ser Ser Leu Leu Ser Gly Leu
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Glu Asn Asn Glu Gly Gly Lys Lys Lys Pro Val Gln Ala Pro Arg Met
                85                      90                      95

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Gly Thr Phe Met Gly Val Tyr Leu Pro Cys Leu Gln Asn Ile Phe Gly
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Val Ile Leu Phe Leu Arg Leu Thr Trp Val Val Gly Ile Ala Gly Ile
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Gly Gly Ser Tyr Tyr Met Ile Ser Arg Ser Leu Gly Pro Glu Phe Gly
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atg tac atc ctg ggc acc atc gag atc ctg ctg gct tac ctc ttc cca Met Tyr Ile Leu Gly Thr Ile Glu Ile Leu Leu Ala Tyr Leu Phe Pro 195 200 205	742
gcg atg gcc atc ttc aag gca gaa gat gcc agt ggg gag gca gcc gcc Ala Met Ala Ile Phe Lys Ala Glu Asp Ala Ser Gly Glu Ala Ala Ala 210 215 220 225	790
atg ttg aat aac atg cgg gtg tat ggc acc tgt gtg ctc acc tgc atg Met Leu Asn Asn Met Arg Val Tyr Gly Thr Cys Val Leu Thr Cys Met 230 235 240	838
gcc acc gta gtc ttt gtg ggc gtc aag tac gtg aac aag ttt gcc ctg Ala Thr Val Val Phe Val Gly Val Lys Tyr Val Asn Lys Phe Ala Leu 245 250 255	886
gtc ttc ctg ggt tgc gtg atc ctc tcc atc ctg gcc atc tac gca ggg Val Phe Leu Gly Cys Val Ile Leu Ser Ile Leu Ala Ile Tyr Ala Gly 260 265 270	934
gtc atc aag tct gcc ttc gat cca ccc aat ttc ccg att tgc ctc ctg Val Ile Lys Ser Ala Phe Asp Pro Pro Asn Phe Pro Ile Cys Leu Leu 275 280 285	982
ggg aac cgc acg ctg tct cgc cat ggc ttt gat gtc tgt gcc aag ctg Gly Asn Arg Thr Leu Ser Arg His Gly Phe Asp Val Cys Ala Lys Leu 290 295 300 305	1030
gct tgg gaa gga aat gag aca gtg acc aca cgg ctc tgg ggc cta ttc Ala Trp Glu Gly Asn Glu Thr Val Thr Thr Arg Leu Trp Gly Leu Phe 310 315 320	1078
tgt tcc tcc cgc ctc ctc aat gcc acc tgt gat gag tac ttc acc cga Cys Ser Ser Arg Leu Leu Asn Ala Thr Cys Asp Glu Tyr Phe Thr Arg 325 330 335	1126
aac aat gtc aca gag atc cag ggc att cct ggt gct gca agt ggc ctc Asn Asn Val Thr Glu Ile Gln Gly Ile Pro Gly Ala Ala Ser Gly Leu 340 345 350	1174
atc aaa gag aac ctg tgg agt tcc tac ctg acc aag ggg gtg atc gtg Ile Lys Glu Asn Leu Trp Ser Ser Tyr Leu Thr Lys Gly Val Ile Val 355 360 365	1222
gag agg cgt ggg atg ccc tct gtg ggc ctg gca gat ggt acc ccc gtt Glu Arg Arg Gly Met Pro Ser Val Gly Leu Ala Asp Gly Thr Pro Val 370 375 380 385	1270
gac atg gac cac ccc tat gtc ttc agt gat atg acc tcc tac ttc acc Asp Met Asp His Pro Tyr Val Phe Ser Asp Met Thr Ser Tyr Phe Thr 390 395 400	1318

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ctg ctt gtt ggc atc tat ttc ccc tca gtc aca ggg atc atg gct ggc Leu Leu Val Gly Ile Tyr Phe Pro Ser Val Thr Gly Ile Met Ala Gly 405 410 415	1366
tcg aac cgg tcc gga gac ctg cgg gat gcc cag aag tct atc cct act Ser Asn Arg Ser Gly Asp Leu Arg Asp Ala Gln Lys Ser Ile Pro Thr 420 425 430	1414
gga act atc ttg gcc att gct acg acc tct gct gtc tac atc agc tct Gly Thr Ile Leu Ala Ile Ala Thr Thr Ser Ala Val Tyr Ile Ser Ser 435 440 445	1462
gtt gtt ctg ttc gga gcc tgc atc gaa ggg gtc gtc cta cgg gac aag Val Val Leu Phe Gly Ala Cys Ile Glu Gly Val Val Leu Arg Asp Lys 450 455 460 465	1510
ttt ggg gaa gct gtg aat ggc aat ctg gtg gtg ggc acc ctg gcc tgg Phe Gly Glu Ala Val Asn Gly Asn Leu Val Val Gly Thr Leu Ala Trp 470 475 480	1558
cct tct cct tgg gtc att gtc ata ggc tct ttc ttc tct acc tgc gga Pro Ser Pro Trp Val Ile Val Ile Gly Ser Phe Phe Ser Thr Cys Gly 485 490 495	1606
gct gga cta cag agc ctc aca ggg gcc cca cgc ctg ctg cag gcc atc Ala Gly Leu Gln Ser Leu Thr Gly Ala Pro Arg Leu Leu Gln Ala Ile 500 505 510	1654
tcc cgg gat ggc ata gtg ccc ttc ctg cag gtc ttt ggc cat ggc aaa Ser Arg Asp Gly Ile Val Pro Phe Leu Gln Val Phe Gly His Gly Lys 515 520 525	1702
gcc aac gga gag cca acc tgg gcg ctg ctg ctg act gcc tgc atc tgt Ala Asn Gly Glu Pro Thr Trp Ala Leu Leu Leu Thr Ala Cys Ile Cys 530 535 540 545	1750
gag atc ggc atc ctc atc gcc tcc ctg gat gag gtc gcc cct atc ctt Glu Ile Gly Ile Leu Ile Ala Ser Leu Asp Glu Val Ala Pro Ile Leu 550 555 560	1798
tcc atg ttc ttc ctg atg tgt tac atg ttt gtg aac ttg gct tgc gcg Ser Met Phe Phe Leu Met Cys Tyr Met Phe Val Asn Leu Ala Cys Ala 565 570 575	1846
gtg cag aca ctg ctg agg acg ccc aac tgg agg cca cgc ttc cga tat Val Gln Thr Leu Leu Arg Thr Pro Asn Trp Arg Pro Arg Phe Arg Tyr 580 585 590	1894
tac cac tgg acc ctc tcc ttc ctg ggc atg agc ctc tgc ctg gcc ctg Tyr His Trp Thr Leu Ser Phe Leu Gly Met Ser Leu Cys Leu Ala Leu 595 600 605	1942
atg ttc att tgc tcc tgg tat tat gcg ctg gta gct atg ctc atc gct Met Phe Ile Cys Ser Trp Tyr Tyr Ala Leu Val Ala Met Leu Ile Ala 610 615 620 625	1990

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ggc ctc atc tat aag tac atc gag tac cgg ggg gca gag aag gag tgg Gly Leu Ile Tyr Lys Tyr Ile Glu Tyr Arg Gly Ala Glu Lys Glu Trp 630 635 640	2038
ggg gat ggg atc cga ggc ctg tct ctc agt gca gct cgc tat gct ctc Gly Asp Gly Ile Arg Gly Leu Ser Leu Ser Ala Ala Arg Tyr Ala Leu 645 650 655	2086
ttg cgt ctg gag gaa gga ccc ccg cat aca aag aac tgg agg ccc cag Leu Arg Leu Glu Glu Gly Pro Pro His Thr Lys Asn Trp Arg Pro Gln 660 665 670	2134
cta ctg gtg ctg gtg cgt gtg gac cag gac cag aac gtg gtg cac ccg Leu Leu Val Leu Val Arg Val Asp Gln Asp Gln Asn Val Val His Pro 675 680 685	2182
cag ctg ctg tcc ttg acc tcc cag ctc aag gca ggg aag ggc ctg acc Gln Leu Leu Ser Leu Thr Ser Gln Leu Lys Ala Gly Lys Gly Leu Thr 690 695 700 705	2230
att gtg ggc tct gtc ctt gag ggc acc ttt ctg gac aac cac cct cag Ile Val Gly Ser Val Leu Glu Gly Thr Phe Leu Asp Asn His Pro Gln 710 715 720	2278
gct cag cgg gca gag gag tct atc cgg cgc ctg atg gag gct gag aag Ala Gln Arg Ala Glu Glu Ser Ile Arg Arg Leu Met Glu Ala Glu Lys 725 730 735	2326
gtg aag ggc ttc tgc cag gta gtg atc tcc tcc aac ctg cgt gac ggt Val Lys Gly Phe Cys Gln Val Val Ile Ser Ser Asn Leu Arg Asp Gly 740 745 750	2374
gtg tcc cac ctg atc caa tcc ggg ggc ctc ggg ggc ctg caa cac aac Val Ser His Leu Ile Gln Ser Gly Gly Leu Gly Gly Leu Gln His Asn 755 760 765	2422
act gtg cta gtg ggc tgg cct cgc aac tgg cga cag aag gag gat cat Thr Val Leu Val Gly Trp Pro Arg Asn Trp Arg Gln Lys Glu Asp His 770 775 780 785	2470
cag aca tgg agg aac ttc atc gaa ctc gtc cgg gaa act aca gct ggc Gln Thr Trp Arg Asn Phe Ile Glu Leu Val Arg Glu Thr Thr Ala Gly 790 795 800	2518
cac ctc gcc ctg ctg gtc acc aag aat gtt tcc atg ttc ccc ggg aac His Leu Ala Leu Leu Val Thr Lys Asn Val Ser Met Phe Pro Gly Asn 805 810 815	2566
cct gag cgt ttc tct gag ggc agc att gac gtg tgg tgg atc gtg cac Pro Glu Arg Phe Ser Glu Gly Ser Ile Asp Val Trp Trp Ile Val His 820 825 830	2614
gac ggg ggc atg ctc atg ctg ttg ccc ttc ctc ctg cgt cac cac aag Asp Gly Gly Met Leu Met Leu Leu Pro Phe Leu Leu Arg His His Lys 835 840 845	2662

28/36

gtc tgg agg aaa tgc aaa atg cgg atc ttc acc gtg gcg cag atg gat Val Trp Arg Lys Cys Lys Met Arg Ile Phe Thr Val Ala Gln Met Asp 850 855 860 865	2710
gac aac agc att cag atg aag aaa gac ctg acc acg ttt ctg tac cac Asp Asn Ser Ile Gln Met Lys Lys Asp Leu Thr Thr Phe Leu Tyr His 870 875 880	2758
tta cga att act gca gag gtg gaa gtc gtg gag atg cac gag agc gac Leu Arg Ile Thr Ala Glu Val Glu Val Val Glu Met His Glu Ser Asp 885 890 895	2806
atc tca gca tac acc tac gag aag aca ttg gta atg gaa caa cgt tct Ile Ser Ala Tyr Thr Tyr Glu Lys Thr Leu Val Met Glu Gln Arg Ser 900 905 910	2854
cag atc ctc aaa cag atg cac ctc acc aag aac gag cgg gaa cgg gag Gln Ile Leu Lys Gln Met His Leu Thr Lys Asn Glu Arg Glu Arg Glu 915 920 925	2902
atc cag agc atc aca gat gaa tct cgg ggc tcc att cgg agg aag aat Ile Gln Ser Ile Thr Asp Glu Ser Arg Gly Ser Ile Arg Arg Lys Asn 930 935 940 945	2950
cca gcc aac act cgg ctc cgc ctc aat gtt ccc gaa gag aca gct tgt Pro Ala Asn Thr Arg Leu Arg Leu Asn Val Pro Glu Glu Thr Ala Cys 950 955 960	2998
gac aac gag gag aag cca gaa gag gag gtg cag ctg atc cat gac cag Asp Asn Glu Glu Lys Pro Glu Glu Glu Val Gln Leu Ile His Asp Gln 965 970 975	3046
agt gct ccc agc tgc cct agc agc tcg ccg tct cca ggg gag gag cct Ser Ala Pro Ser Cys Pro Ser Ser Ser Pro Ser Pro Gly Glu Glu Pro 980 985 990	3094
gag ggg gag ggg gag aca gac cca gag aag gtg cat ctc acc tgg acc Glu Gly Glu Gly Glu Thr Asp Pro Glu Lys Val His Leu Thr Trp Thr 995 1000 1005	3142
aag gat aag tca gcg gct cag aag aac aaa ggc ccc agt ccc gtc Lys Asp Lys Ser Ala Ala Gln Lys Asn Lys Gly Pro Ser Pro Val 1010 1015 1020	3187
tcc tcg gag ggg atc aag gac ttc ttc agc atg aag ccg gag tgg Ser Ser Glu Gly Ile Lys Asp Phe Phe Ser Met Lys Pro Glu Trp 1025 1030 1035	3232
gaa aac ttg aac cag tcc aac gtg cgg cgc atg cac aca gct gtg Glu Asn Leu Asn Gln Ser Asn Val Arg Arg Met His Thr Ala Val 1040 1045 1050	3277
cgg ctg aac gag gtc atc gtg aat aaa tcc cgg gat gcc aag ttg Arg Leu Asn Glu Val Ile Val Asn Lys Ser Arg Asp Ala Lys Leu 1055 1060 1065	3322



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cattgcccac tccagggcca gggccactag ctgacctcac cacctttttc cttgagccca 4766  
 aggcagagag agctgcagct ggtgccatct agacaggctc aagtgtggcc agtggcaggg 4826  
 ctcgagggcc actgccctgt tgcttggtctc aggacctctc tgagatttga tggggactgg 4886  
 atattcttcc aggtagtagc catcaagtcg gaagtgttgg acccaggacc tgacattcct 4946  
 tcaagactgc cctcccttgc tgtggttttg ccttttgggg caagagaggg gctgggcaaa 5006  
 cggggaggag gcagtatcaa caccgattag ggaaccaaag ttgcactacc tggggccagc 5066  
 ctctggttgg caagagcaaa gtttctgttg atgaaaacaa acagcccaca acaacacccc 5126  
 ccccccggtt ttctgtgctc catgtgcaat atttgttatg aaccttgtgt cgttcaagtc 5186  
 acctttataa tcaactgtagc tagatgttcc atgtccatcc aggtgacttt actctgagtg 5246  
 caatatttca atagcctggg agtgagaaga gtgttgcttt tgtttcagcc gacctatgtg 5306  
 cagggcaatg caatgcagtc caaaaccctt gtaaatagga gaggttgcaa gccaaatcaa 5366  
 gagtatttat cgttattact attattatta ggccctgcctt taattttagt gtttcggtat 5426  
 ttcgcatcct gcctcggtat tgatcgtgtg ttctctgtgc caatatgcaa aggagaggat 5486  
 cagttctttc ctttactgtt gaatgctccc atttactgct ttaaggcttt tactgtgttc 5546  
 attttttaga tacctgtctg 5566

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 <212> PRT  
 <213> Rattus norvegicus

<400> 6

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 Pro Gly Asp Gly Asn Pro Lys Glu Ser Ser Pro Phe Ile Asn Ser Thr  
 20 25 30  
 Asp Thr Glu Lys Gly Arg Glu Tyr Asp Gly Arg Asn Met Ala Leu Phe  
 35 40 45  
 Glu Glu Glu Met Asp Thr Ser Pro Met Val Ser Ser Leu Leu Ser Gly  
 50 55 60  
 Leu Ala Asn Tyr Thr Asn Leu Pro Gln Gly Ser Lys Glu His Glu Glu  
 65 70 75 80



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Leu Ala Trp Glu Gly Asn Glu Thr Val Thr Thr Arg Leu Trp Gly Leu  
 305 310 315 320

Phe Cys Ser Ser Arg Leu Leu Asn Ala Thr Cys Asp Glu Tyr Phe Thr  
 325 330 335

Arg Asn Asn Val Thr Glu Ile Gln Gly Ile Pro Gly Ala Ala Ser Gly  
 340 345 350

Leu Ile Lys Glu Asn Leu Trp Ser Ser Tyr Leu Thr Lys Gly Val Ile  
 355 360 365

Val Glu Arg Arg Gly Met Pro Ser Val Gly Leu Ala Asp Gly Thr Pro  
 370 375 380

Val Asp Met Asp His Pro Tyr Val Phe Ser Asp Met Thr Ser Tyr Phe  
 385 390 395 400

Thr Leu Leu Val Gly Ile Tyr Phe Pro Ser Val Thr Gly Ile Met Ala  
 405 410 415

Gly Ser Asn Arg Ser Gly Asp Leu Arg Asp Ala Gln Lys Ser Ile Pro  
 420 425 430

Thr Gly Thr Ile Leu Ala Ile Ala Thr Thr Ser Ala Val Tyr Ile Ser  
 435 440 445

Ser Val Val Leu Phe Gly Ala Cys Ile Glu Gly Val Val Leu Arg Asp  
 450 455 460

Lys Phe Gly Glu Ala Val Asn Gly Asn Leu Val Val Gly Thr Leu Ala  
 465 470 475 480

Trp Pro Ser Pro Trp Val Ile Val Ile Gly Ser Phe Phe Ser Thr Cys  
 485 490 495

Gly Ala Gly Leu Gln Ser Leu Thr Gly Ala Pro Arg Leu Leu Gln Ala  
 500 505 510

Ile Ser Arg Asp Gly Ile Val Pro Phe Leu Gln Val Phe Gly His Gly  
 515 520 525

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Lys Ala Asn Gly Glu Pro Thr Trp Ala Leu Leu Leu Thr Ala Cys Ile  
 530 535 540

Cys Glu Ile Gly Ile Leu Ile Ala Ser Leu Asp Glu Val Ala Pro Ile  
 545 550 555 560

Leu Ser Met Phe Phe Leu Met Cys Tyr Met Phe Val Asn Leu Ala Cys  
 565 570 575

Ala Val Gln Thr Leu Leu Arg Thr Pro Asn Trp Arg Pro Arg Phe Arg  
 580 585 590

Tyr Tyr His Trp Thr Leu Ser Phe Leu Gly Met Ser Leu Cys Leu Ala  
 595 600 605

Leu Met Phe Ile Cys Ser Trp Tyr Tyr Ala Leu Val Ala Met Leu Ile  
 610 615 620

Ala Gly Leu Ile Tyr Lys Tyr Ile Glu Tyr Arg Gly Ala Glu Lys Glu  
 625 630 635 640

Trp Gly Asp Gly Ile Arg Gly Leu Ser Leu Ser Ala Ala Arg Tyr Ala  
 645 650 655

Leu Leu Arg Leu Glu Glu Gly Pro Pro His Thr Lys Asn Trp Arg Pro  
 660 665 670

Gln Leu Leu Val Leu Val Arg Val Asp Gln Asp Gln Asn Val Val His  
 675 680 685

Pro Gln Leu Leu Ser Leu Thr Ser Gln Leu Lys Ala Gly Lys Gly Leu  
 690 695 700

Thr Ile Val Gly Ser Val Leu Glu Gly Thr Phe Leu Asp Asn His Pro  
 705 710 715 720

Gln Ala Gln Arg Ala Glu Glu Ser Ile Arg Arg Leu Met Glu Ala Glu  
 725 730 735

Lys Val Lys Gly Phe Cys Gln Val Val Ile Ser Ser Asn Leu Arg Asp  
 740 745 750

Gly Val Ser His Leu Ile Gln Ser Gly Gly Leu Gly Gly Leu Gln His  
 755 760 765

Asn Thr Val Leu Val Gly Trp Pro Arg Asn Trp Arg Gln Lys Glu Asp  
 770 775 780

His Gln Thr Trp Arg Asn Phe Ile Glu Leu Val Arg Glu Thr Thr Ala  
 785 790 795 800

Gly His Leu Ala Leu Leu Val Thr Lys Asn Val Ser Met Phe Pro Gly  
 805 810 815

Asn Pro Glu Arg Phe Ser Glu Gly Ser Ile Asp Val Trp Trp Ile Val  
 820 825 830

His Asp Gly Gly Met Leu Met Leu Leu Pro Phe Leu Leu Arg His His  
 835 840 845

Lys Val Trp Arg Lys Cys Lys Met Arg Ile Phe Thr Val Ala Gln Met  
 850 855 860

Asp Asp Asn Ser Ile Gln Met Lys Lys Asp Leu Thr Thr Phe Leu Tyr  
 865 870 875 880

His Leu Arg Ile Thr Ala Glu Val Glu Val Val Glu Met His Glu Ser  
 885 890 895

Asp Ile Ser Ala Tyr Thr Tyr Glu Lys Thr Leu Val Met Glu Gln Arg  
 900 905 910

Ser Gln Ile Leu Lys Gln Met His Leu Thr Lys Asn Glu Arg Glu Arg  
 915 920 925

Glu Ile Gln Ser Ile Thr Asp Glu Ser Arg Gly Ser Ile Arg Arg Lys  
 930 935 940

Asn Pro Ala Asn Thr Arg Leu Arg Leu Asn Val Pro Glu Glu Thr Ala  
 945 950 955 960

Cys Asp Asn Glu Glu Lys Pro Glu Glu Glu Val Gln Leu Ile His Asp  
 965 970 975

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Gln Ser Ala Pro Ser Cys Pro Ser Ser Ser Pro Ser Pro Gly Glu Glu  
                   980                                  985                                  990

Pro Glu Gly Glu Gly Glu Thr Asp Pro Glu Lys Val His Leu Thr Trp  
                   995                                  1000                                  1005

Thr Lys Asp Lys Ser Ala Ala Gln Lys Asn Lys Gly Pro Ser Pro  
          1010                                  1015                                  1020

Val Ser Ser Glu Gly Ile Lys Asp Phe Phe Ser Met Lys Pro Glu  
          1025                                  1030                                  1035

Trp Glu Asn Leu Asn Gln Ser Asn Val Arg Arg Met His Thr Ala  
          1040                                  1045                                  1050

Val Arg Leu Asn Glu Val Ile Val Asn Lys Ser Arg Asp Ala Lys  
          1055                                  1060                                  1065

Leu Val Leu Leu Asn Met Pro Gly Pro Pro Arg Asn Arg Asn Gly  
          1070                                  1075                                  1080

Asp Glu Asn Tyr Met Glu Phe Leu Glu Val Leu Thr Glu Gln Leu  
          1085                                  1090                                  1095

Asp Arg Val Met Leu Val Arg Gly Gly Gly Arg Glu Val Ile Thr  
          1100                                  1105                                  1110

Ile Tyr Ser  
          1115

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<211> 20

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<213> Artificial sequence

<220>

<223> Synthetic oligonucleotide

<400> 7

tctccttggg attgccgtca

20

<210> 8

<211> 20

<212> DNA

36/36

<213> Artificial sequence

<220>

<223> Synthetic oligonucleotide

<400> 8

tcttcttgag actgcagtca

20